

WHAT IS CLAIMED IS:

Sub Q⁸

1. A multiple decoding apparatus receiving a signal composed of a plurality of encoded data for simultaneously decoding two or more of the data, comprising:

a reproduction controller for outputting various types of control information related to decoding and reproduction of the data;

a data extractor receiving said signal for extracting the two or more data designated by said control information;

a buffer storing the data extracted by said data extractor;

a buffer manager for controlling said buffer in accordance with said control information for said buffer;

a data flow controller for distributing the data stored in said buffer for each type and transferring the data in accordance with provided transfer conditions;

a plurality of separate buffers for respectively storing the data distributed and transferred by said data flow controller;

a separate buffer manager for respectively controlling said separate buffers in accordance with information related to the specification of said separate buffer;

a plurality of decoders respectively corresponding to said plurality of separate buffers for decoding the data stored in said separate buffers and outputting the decoded data; and

a decoding controller for selecting said separate buffer

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and said decoder which are used for the decoding in accordance
25 with said control information, and outputting information related
to the selected separate buffer, said transfer conditions based
on the selected separate buffer, and an instruction to start the
decoding, respectively, to said separate buffer manager, said
data flow controller, and said selected decoder.

30 2. The multiple decoding apparatus according to claim 1,
wherein

said buffer manager outputs, when said buffer becomes full of
the data, an overflow notification to said reproduction controller,

5 said reproduction controller outputs, upon receipt of said
overflow notification, an instruction to stop the data extraction
to said data extractor, and outputs an initialization instruction
to said decoding controller;

10 said decoding controller outputs, upon receipt of the
initialization instruction from said reproduction controller, an
instruction to initialize all said plurality of separate buffers to
said separate buffer manager, outputs to said buffer manager an
instruction to initialize said buffer, and respectively outputs
instructions to stop the decoding to all said plurality of decoders,

15 said buffer manager initializes said buffer in accordance with
the initialization instruction from said decoding controller,

said separate buffer manager initializes all said plurality
of separate buffers in accordance with the initialization instruction

from said decoding controller, and

20 all the processing which is stopped is resumed after all said
buffer and said plurality of separate buffers are initialized.

3. The multiple decoding apparatus according to claim 1,
wherein

5 said separate buffer manager outputs, when the specific
separate buffer becomes full of the data, an overflow notification
that the specific separate buffer overflows to said decoding
controller,

10 said decoding controller outputs, upon receipt of the
overflow notification that said specific separate buffer
overflows, an instruction to stop the data transfer to the
specific separate buffer to said data flow controller, outputs
an instruction to stop the decoding to said decoder corresponding
to the specific separate buffer, and outputs to said separate
buffer manager an instruction to initialize the specific separate
buffer,

15 said separate buffer manager initializes said specific
separate buffer in accordance with the initialization instruction
from said decoding controller, and

all the processing which is stopped is resumed after said
specific separate buffer is initialized.

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4. The multiple decoding apparatus according to claim 1,

distributing the data stored in said buffer for each type and respectively storing the data in the plurality of separate buffers; and

10 respectively decoding the data stored in said plurality of separate buffers and outputting the decoded data.

6. The multiple decoding method according to claim 5, further comprising, when said buffer becomes full of the data, the steps of stopping extraction and decoding of the data,

5 initializing all said buffer and said plurality of separate buffers, and

 resuming all the processing which is stopped after all said buffer and said plurality of separate buffers are initialized.

7. The multiple decoding method according to claim 5, further comprising, when the specific separate buffer becomes full of the data, the steps of

5 stopping the distribution of the data into said specific separate buffer and the decoding of the data stored in the specific separate buffer,

 initializing said specific separate buffer; and

 resuming all the processing which is stopped after said specific separate buffer is initialized.

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8. The multiple decoding method according to claim 5,

further comprising,

when the specific separate buffer becomes full of the data,
the steps of

5 discarding the data directed toward said specific separate
buffer,

stopping the decoding of the data stored in said specific
separate buffer,

initializing said specific separate buffer, and

10 resuming all the processing which is stopped after said
specific separate buffer is initialized, and releasing the
discard of said data.

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